

Two controlled experiments to reduce APRs offered to store cardholders

1. A store card provider and one of its retailer clients carried out two experiments involving the reduction of APRs on the store card. The purpose of the experiments was to test whether lowering the APRs (without any increase in utility) would drive further spend, such that the increased balances would be sufficient to offset the APR reduction.

Experiment 1

2. In the first experiment, a sample of store cardholders were divided into the following four categories on the basis of behaviour during the 12 months up to November 2000:
 - (a) *Revolvers, ie interest payers*: the test group included 4,000 for whom the APR was reduced to 18.9 per cent and a further 4,000 for whom the APR was reduced to 23.9 per cent; there was a control group of 4,000 for whom APRs were unchanged.
 - (b) *Free riders, ie those spending more than once and not incurring interest*: the test group was split 50/50 between those offered an 18.9 per cent APR and those offered a 23.9 per cent APR; APRs for the control group remained unchanged.
 - (c) *Hit and Run, ie those who spent once without incurring interest*: all in the test group were offered an 18.9 per cent APR; APRs for the control group were unchanged.
 - (d) *Dormant, ie those who had not spent at all*: all in the test group were offered 18.9 per cent; APRs for the control group were unchanged.
3. The experiment involved the comparison of the test groups with the control groups over 12 months.¹ Data on the results is incomplete, but a summary of the available data shows:
 - (a) There was no increase in the balances of the revolvers (indeed their balances fell) and little change in the balances of the other categories. There was an anomaly in the balances of the revolvers for December 2000 and January 2001. We queried this with the provider; it said that to the best of its knowledge the numbers provided were correct and that any apparent blips on a month-to-month basis appeared to be due to the randomness of the sample. We think there may have been some sort of data corruption to the December 2000 and January 2001 balances but the balances for February appear reasonable.
 - (b) There was an increase in spend by the test-group revolvers (both those on an 18.9 per cent APR and those on a 23.9 per cent APR), relative to spending by their control group, of 6.5 per cent over the 12 months. The CC notes that the size of the revolvers' sample groups was smaller than those of the other

¹We have no data available for the period before the APR reduction or for the period after November 2001 although it appears that participants retained the lower APR indefinitely.

categories, with the consequence that results relating to the revolvers are subject to greater uncertainty due to random variation in spending patterns.

- (c) There was little change in spending by the other groups, with the spending by free riders slightly down and the spending by the other two categories slightly up.
 - (d) As a result of a substantial decrease in APR without any increase in balances, there was a sharp drop in the income of the provider from the revolvers' accounts at the retailer. (The provider obtains little income from store cardholders in the other categories and the experiment did not change this.)
4. Overall, the raw results suggest that the reduction in revenue to the provider was about double the increased profits to the retailer, assuming a retail margin of 50 per cent. Moreover, the statistical uncertainties surrounding the increased revolver spend is much greater (because it may have been due to random variation in spending patterns) than that surrounding the reduction in revenue.

Experiment 2

5. A further experiment was undertaken, in which the APR for free riders was further reduced to 9.9 per cent in June 2002. As with the original experiment reducing APRs for the free riders, this does not seem to have had any noticeable effect on their purchases or balances.

Provider's and retailer's assessments

6. The provider summarized the results of the first experiment, in a presentation to the retailer, as follows:
- (a) *Highlights:*
 - (i) Interest payers: had an aggregate rise in incremental spend.
 - (ii) Free riders: drop in aggregate incremental spend.
 - (iii) Hits and runs/dormant: little or no incremental effect.
 - (b) *Results prove statistically insignificant:*
 - (i) If we did this again, we would get different results.
 - (ii) Direct Mail campaign could deliver superior return on investment.
 - (iii) Only significant factor is loss of income to provider.
7. The retailer commented to us on the following difficulties it saw with the trial:
- (a) *Statistical uncertainties:*
 - (i) The presentation on the results stated that the results prove statistically insignificant.
 - (ii) The presentation on the results stated that, if we did this again, we would get different results.

- (iii) Point (ii) seems to be borne out by the outcome that in Experiment 1 there was increased spend and in Experiment 2 there was reduced spend.

(b) *Analytical Issues:*

- (i) Data on the results is incomplete.
 - (ii) There was an anomaly in the data (see paragraph 3(a)).
 - (iii) The results of the trial seem to have little commercial logic. For example, almost all communications with customers generate spend purely as a result of the contact. However the trial refers to spending being down except for revolvers in Experiment 1. Indeed in the instance of Experiment 2 it refers to no change in average transaction frequency but a reduction in average spend (ie that the trial induced a lower spend per transaction for those who were contacted with the lower APR rate!).
8. The retailer added that, if there had been any conclusion to be drawn from the trial, and that conclusion had been that there was an increase in spend, it would have pressed for the trial to be rolled out. The retailer emphasized that it had no financial share of the credit income from the levels of APR or balances and no control over the APR rate. Its focus in relation to the store card was to maximize its sales, even if these were marginally profitable due to the discounts and operating costs of a store card. It would be keen to increase those sales if this resulted from a lower APR (and hence had introduced a store-branded MasterCard, with a planned typical APR of 16.9 per cent and an initial APR of 9.9 per cent). A consolidation of the financial data it had presented to the CC showed the total store card position including the profit from incremental sales that it believed may be generated from the card. On this total basis, the aggregate profit was small—amounting in one year to a loss and in another to 1 per cent of the retailer's total profit.